

# CONTENTS

## TECHNICAL SESSION I : INNOVATIVE TECHNOLOGIES

1. Future of Affordable Housing - 3D Printing Construction Technologies ..... 01  
*Dr. Oscar Concessao & Dr. Ponni Concessao*
2. Innovative Modular Formwork System for Monolithic Concrete Construction ..... 07  
*T.K. Das*
3. Glass Fiber Reinforced Gypsum Panel Technology..... 12  
*Abhai Bhatnagar & Akhilesh Kumar Pandey*
4. Use of Bamboo as an Alternative Construction Material..... 21  
*K. N. Narasimha Prasad, Siddesh K. Pai & Bharat Bhushan Jangid*
5. Affordable Housing: Emerging Technologies and Building Materials in Indian Context ..... 27  
*Gaurav Gangwar*
6. Affordable Housing Utilising the Concept of Green Building..... 34  
*J. Bhattacharjee*
7. Affordable Housing for All..... 40  
*A.K. Jain*
8. New Technologies for Affordable Housing..... 49  
*Dr. Mutyala R Prakash*
9. Rapid Wall System for Affordable Housing..... 54  
*Rajdeep Chowdhury*

## TECHNICAL SESSION II : PLANNING & DESIGN

10. Policy of Affordable Housing and Construction Technology..... 59  
*Dr. K. M. Soni*
11. Lean Construction: A Way Forward for Affordable Housing ..... 66  
*Lt. Col. Harsh Raghuvanshi & Dr. K.N. Jha*

12.	Innovative Affordable Housing Techniques and Technologies.....	71
	<i>K.T. Gurumukhi</i>	
13.	Design Consideration for Affordable Coastal Housing.....	77
	<i>Mamata R. Singh &amp; Rajesh Kumar Singh</i>	
14.	Smart Affordable Housing.....	83
	<i>P.K.Ratho</i>	
15.	Design Aspects in Construction of Affordable Housing.....	87
	<i>Dr. Indrasen Singh</i>	
16.	Fundamentals of Affordable Housing Project.....	93
	<i>Gaurishankar Dubey</i>	
17.	Sustainable Design: For Developing Affordable Housing.....	97
	<i>Narender Singh</i>	
18.	Affordable Housing: Rights of Citizen.....	103
	<i>Rakesh Sabharwal &amp; Manju Sabharwal</i>	
19.	Estimating Seismic Response Based on Non-Linear Dynamic Analysis for Affordable Housing ....	109
	<i>Ram Babu Prasad &amp; Manmohan Kumar</i>	
20.	Design Criteria for Safe and Quality Construction of Affordable Housing.....	119
	<i>O.P. Gupta VSM, Vijay Gupta, Chandan Gupta, Vaibhav Gupta &amp; Abhishek Gupta</i>	

### **TECHNICAL SESSION III : CASE STUDIES**

21.	Low Cementitious High Flow Concrete for Mass Affordable Housing Applications .....	125
	<i>Anil Kulkarni &amp; K Renuka Prasanna</i>	
22.	Affordable Rental Housing.....	129
	<i>Usha Batra</i>	
23.	Space Saving Concepts for Affordable Housing – Case Studies.....	136
	<i>Ankur Prabhakar Attri</i>	
24.	Affordable Housing - A Case Study.....	144
	<i>Prof. R. Sathish Kumar &amp; Prof. K. R. Ramana</i>	

25.	Affordable Housing for Multi Hazardous Region of Bihar - A Case Study.....	150
	<i>Dukhi Sah</i>	
26.	Credit Based Eco-Housing Model for Rural Areas.....	157
	<i>Dr. Alka Srivastava &amp; Amol Mangrulkar</i>	
27.	Innovative Technologies for Affordable Housing - A Case Study.....	167
	<i>B.N. Moolchandani</i>	
28.	Affordable Housing in Tsunami Affected Areas - Case Study.....	173
	<i>Dr. Pawan Kumar</i>	
29.	Technologies in Affordable Housing - Case Study.....	178
	<i>Abhishek R. Dole</i>	